

Abstract

The present invention discloses a gain control method used at the initial cell searching by the user terminal in TD-SCDMA mobile communication system. At each carrier frequency, the user terminal firstly receives and records the data of a plurality of subframes transmitted from a base station when the receiver is set at the maximum gain; searches the DwPTS positions by using the time window decision method; performs the succeeding steps of the initial cell searching subsequently when the DwPTS positions can be obtained; judges whether the receiver is in saturation when the DwPTS positions can not be obtained; decreases the receiver gain by a large step and receives and records the data of a plurality of subframes transmitted from the base station if the receiver is in saturation; and determines that there is no base station for working at the present carrier frequency if the receiver is not in saturation. The above initial cell searching procedures are repeated until the receiver is not in saturation any more. The ADC of user terminals can finish the initial cell searching under the condition of less dynamic range by using the present invention.